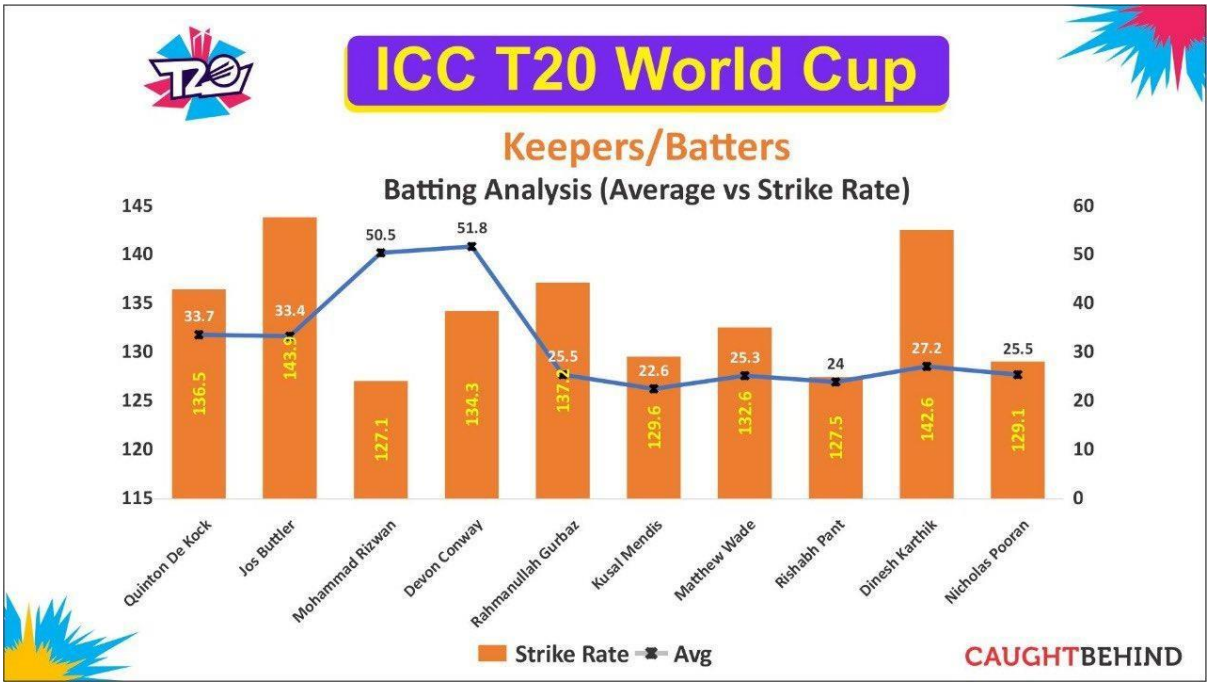
What is a Capstone Project? Why do we do it?

Many of you might be wondering, what is this Capstone Project? Why are we doing this in the firstplace?

A Capstone Project is an independent research project, which you do based on the understanding of your theoretical subject. In this case, it's the BDM course. Project is where your creativity and understanding is put to test.

Gains in knowledge without practical application is truly a missed learning opportunity.



I was checking my twitter during the T20 cricket world cup, I saw this chart and an expert was saying as to why Devon Conway and Md. Rizwan were the best Wicket Keeping batsman now because their average was more than others. But to me his argumentdidn't seem convincing. And the reason being that you can't make a comparison on 1 factor alone. I went back and checked stats and there were several things which were omitted: the batting position, home ground/ away, opponents faced, batting position, bowlers they face etc.So, you see that's why his argument made no sense to me. While average is a factor, it cannot be the only factor per se.

As you do Capstone project, you will realize that performance, profitability, losses cannot be attributed to one factor alone. But it is due to the combination and interaction of multiple factors.

When you start a Capstone Project, you need to reach out to business (organized/ unorganized). Every business has problem(s). While the organized sectors have necessary resources to tackle and solve issues, unorganized might not have them and if any problem remains unresolved it has an impact on the business, implying profits take a hit and customers are dissatisfied. Customer churn could happen!

But organized sectors could falter too. If you look at the travel and hospitality industry, they do overbook because cancellations tend to be quite common. However, if both customers turn up

together at same time and they have problems. While sometimes they upgrade rooms and compensate, in some cases they give a single bedroom in place of 2 beds and a compensation, let's say 80% (to keep customer satisfied). While the firm solved the problem, the compensation offered could be more than what the customer anticipated. If that's the case, there isa loss. The customer could perhaps be satisfied with compensation in range of 40%-60%. Now how do we understand this, you know the answer.

So essentially, you speak to the business owners and try to understand the problems they face. Then take a problem or two and collect data pertaining to that problem. The data you collect in this process is called "Primary Data", which means data collected for the problem at hand. It could be given by the owner(s) themselves or by other methods of primary data collection (Refer Market Research Book in Rubrics).

You should never use secondary data. This means data available from online sources like GitHub, Kaggle etc. Anybody doing this, will have a straight rejection.

When you have collected the data, the next step is to clean it.

So, what is data cleaning? Essentially the data you collect has useful information + Noise and in order to get good outputs you need to separate the information and noise (Refer Data Analysis book by Paul Newbold). Not clear?

Let's say, there are 4 types of bread a shop sells, priced INR 15.23/Kg, 20.21/Kg, 16.37/Kg and last entry you see is 1234/Kg. Now when you check the items you know it cannot be the case. So, one way is to reach out to the owner and find out if it is an entry mistake and correct it, otherwise remove it. If you are to proceed with erroneous numbers, all your calculations, graphs and implications go wrong!

Once the cleaning is done, you essentially arrange it and then decide what to plot. I usually see students doing Pareto. I don't recommend it. Why? Every business knows that 20% of items–> 80% of problems. So, there is nothing new you will tell them. Rather I suggest you try doing different graphs based on your understanding of various subjects you have taken in the course.

So, if I do a box and whisker plot, then I need to have a Qual Vs Quant. For e.g.: Items and the pricing etc. It's only when you try doing newer plots and learn new graphs this project is helpful to you.

Only you get the plots, you infer based on what you see. You mention for example, an increasing demand during winter and a drop in summer for 2020, but for 2021 both are the same. Sometimes you have reasons, but when you don't… you are confused, what can you make out of this? Keep thinking!

This anomaly could be an interesting finding and something the businesses may not know. Now based on the findings you tell the businesses implications

What should firms do?

What should they not do?

What product/ service lines they need to continue and why?

What not to continue and why?

Do not tell me that during winter they should stock/ not stock ice creams. This is something anybody can tell.

Now coming to data collection: Its v hard. But when you keep trying you succeed. Personally, for my research I needed 250+ B2B manager data points to do analysis. I approached 1287 respondents and succeeded in getting 283 usable responses. It took 3 months and many polite reminders and follow ups.

This project, if done well, can give you the confidence to independently manage part of consultancy projects.

But if you only do pareto, bar and pie charts, you learn nothing and it's just a waste!

Best,

Dr. Aaditya Chandel

Dr. Ashwin J. Baliga